

## **REMARKS**

### **I. Status of the Claims**

Claims 1-48 were originally filed. Subsequently, claims 2, 3, 10, 17-26, 28-33, and 46-48 were canceled. Claims 1, 4-9, 11-16, 27, and 34-45 are pending under examination.

Upon entry of the present amendment, claim 1 now specifically recites that "the valve body comprising a single fluid processing region continuously coupled fluidically to a single fluid displacement region." This language finds support in the specification as originally filed, *e.g.*, in Figure 8. No new matter is introduced.

### **II. Claim Rejections**

#### **A. 35 U.S.C. §102**

Claims 1, 12, 14, 15, 27, 34, and 42-44 are rejected under 35 USC §102(b) for alleged anticipation by Nichols (U.S. Patent No. 6,012,488). Applicant respectfully traverses the rejection.

To anticipate a pending claim, a prior art reference must provide, either expressly or implicitly, each and every limitation of the pending claim. MPEP §2131. The pending claims are drawn to a fluid control and processing system. The system comprises a housing having a plurality of chambers and a valve body received in the housing. Among other features, the valve body comprises a single fluid processing region continuously coupled fluidically to a single fluid displacement region. The fluid processing region is contained within a disk portion of the valve body and the fluid displacement region is contained substantially within a tubular portion of the valve body.

In contrast, Nichols describes an apparatus that receives and delivers different fluid samples in separate slugs to a detector. As illustrated in Figures 6-8, the apparatus includes two portions: a stator (140) and a rotor (150), that move relative to each other. The stator (140) has multiple sample holes (51-54) that deliver different samples and multiple solvent holes (91-94) that deliver solvent, which may be used to separate slugs of different samples. A number of

grooves are present in the rotor portion of the apparatus. Groove (62) in the rotor communicates with holes in the stator by rotation of the rotor to direct the sample or solvent plug to the detector through the center hole (40) in the stator.

On page 3 of the Office Action, the Examiner identifies rotor (64) in Figure 6 of Nichols as allegedly corresponding to the "disk portion" and stator (32) in Figure 6 of Nichols as allegedly corresponding to the "tubular portion" of the valve body of the instant invention. On page 4, the Examiner alleges that groove (62) is the "fluid processing region" and that the channel connecting any one sample hole with its corresponding sample source is the "fluid displacement region." Applicant respectfully disagrees.

To begin with, it is incorrect to assign rotor 64 and stator 32 in Figure 6 of Nichols as the "disk portion" and the "tubular portion" of the valve body, respectively. Figure 6 clearly shows that 64 and 32 are of the identical or nearly identical diameters, which directly contradicts the plain English meaning of a "disk portion" and a "tubular portion" of a valve body.

More importantly, if rotor (64) and stator (32) are considered as the "disk portion" and the "tubular portion" of a valve body, then Nichols fails to provide the feature of a "valve body" as recited in the last section of claim 1:

the valve body being adjustable relative to a plurality of chamber ports to allow the external ports to be placed selectively in fluidic communication with the plurality of chambers, wherein at least one of the plurality of chambers is a processing chamber different from said fluid processing region, the processing chamber including a first chamber port and a second chamber port for selectively communicating with at least one of the external ports of the valve body, wherein the processing chamber contains a fluid processing material which is an enrichment material that captures a target from the fluid sample, or a trapping material that traps unwanted material from the fluid sample. (emphasis added)

This is because, rotor (64) and stator (32) are the parts in Nichols' device that are adjustable relative to each other; if they are characterized as the "disk portion" and the "tubular portion" of a valve body, then the "valve body" they make up is not "adjustable relative to a plurality of chamber ports" as required by claim 1.

Even though the above discussion has already set forth several definitive distinctions between the claimed system of this invention and Nichols' device, for the sole purpose of further facilitating the effort to overcome the rejections based on Nichols, Applicant has amended claim 1 to recite that "a single fluid processing region continuously coupled fluidically to a single fluid displacement region." This requirement is not met by Nichols' apparatus, because Nichols' groove (62) in the rotor is constantly turned to connect various different sample holes or solvent holes with the center hole. There is no single "fluid displacement region" that is "continuously coupled fluidically" to a single "fluid processing region."

Nichols therefore fails to provide at least some limitations of claim 1. All other pending claims in this application depend directly or indirectly from claim 1. As such, Nichols cannot anticipate the system as defined by the pending claims. Withdrawal of the rejection under 35 U.S.C. §102(b) is therefore respectfully requested.

**B. 35 U.S.C. §103**

Claims 4-9, 11, 13, 16, and 45 are rejected under 35 U.S.C. §103(a) for alleged obviousness over Nichols in view of Anderson (U.S. Patent No. 5,273,656). Claims 35-37 are rejected under 35 U.S.C. §103(a) for alleged obviousness over Nichols in view of Loewy (U.S. Patent No. 6,387,710). Claims 38-41 are rejected under 35 U.S.C. §103(a) for alleged obviousness over Nichols in view of Lecerf (U.S. Patent No. 4,705,059). Applicant respectfully traverses these rejections.

To establish a *prima facie* case of obviousness, three basic criteria must be met: first, the prior art references must teach or suggest all the claim limitations; second, there must be some suggestion or motivation, either in the references or in the knowledge generally available

to one of ordinary skill in the art, to combine the limitations; third, there must be a reasonable expectation of success in combining the limitations. MPEP §2143.

As discussed in the last section, Nichols fails to provide at least some of the features of the pending claims: a "disk portion" and a "tubular portion" of a valve body, a "valve body," and also a single "fluid displacement region" that is "continuously coupled fluidicly" to a single "fluid processing region." On the other hand, the secondary references are cited not for supplementing these missing features, but for providing additional features recited in various dependent claims: Anderson is cited to provide the features of the fluid processing material comprising certain specific types of solid phase material, certain functions of such solid phase material, the fluid processing material comprising certain specific liquid phase material, and the fluid processing material being contained in the fluid processing region by one or more frits; Loewy is cited to provide the feature of a fluid displacement member disposed in the fluid displacement region, where the fluid displacement member is movable to adjust the volume of the fluid displacement region, and the fluid displacement member comprises a piston movable in a linear direction in the fluid displacement region; and Lecerf is cited to provide the feature of an energy transmitting member coupled to the fluid processing region for transmitting energy. It is therefore clear that each of the combinations of Nichols and Anderson, Nichols and Loewy, and Nichols and Lecerf fails to provide all features present in the dependent claims rejected under 35 U.S.C. §103(a). Therefore, no *prima facie* obviousness has been or can be established.

As such, Applicant respectfully requests that the obviousness rejections be withdrawn.

### CONCLUSION

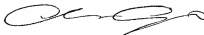
In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

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